

**IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF TEXAS  
MARSHALL DIVISION**

KAIST IP US LLC,	§	
	§	
Plaintiff,	§	
	§	
v.	§	No. 2:16-CV-01314-JRG-RSP
	§	
SAMSUNG ELECTRONICS CO.,	§	
LTD., et al.,	§	
	§	
Defendants.	§	

**MEMORANDUM OPINION AND ORDER**

Plaintiff moves to exclude certain portions of Dr. Vivek Subramanian’ rebuttal report on infringement. Pl.’s Mot. to Exclude [Dkt. # 219]. The Court will **GRANT** the motion **IN PART**.

\* \* \*

**A. Subramanian’s Opinion Concerning Whether “Double-Gate FinFET” is Limiting (¶¶ 82–89)**

Plaintiff contends paragraphs 82–89 of Subramanian’s rebuttal report concern an issue the Court has already resolved—namely, whether “double-gate FinFET” limits the claimed devices to only two gates. Pl.’s Mot. [Dkt. # 219] at 2–3. During claim construction, the Court concluded the term was *not* limiting. Cl. Constr. Mem. Op. & Order [Dkt. # 179] at 13–17. Subramanian’s rebuttal report acknowledges the Court’s construction, but nonetheless notes “the Accused Devices are not double-gate FinFET

devices.” Subramanian Rep. [Dkt. # 219-2] ¶ 82.

Defendants do not contest Plaintiff’s characterization of these paragraphs as inconsistent with the Court’s constructions. Instead, Defendants note Judge Gilstrap, as of the time of their response, had not yet ruled on their objections. Defs.’ Resp. [Dkt. # 273] at 2. Thus, say Defendants, they were required to maintain their positions or risk waiver on appeal. *Id.* Defendants ask that, if the Court grants this part of Plaintiff’s motion, the Court hold these arguments are not waived for purposes of appeal. *Id.* at 3.

Judge Gilstrap has since overruled Defendants’ objections, Order [Dkt. # 388], and Defendants do not contest these issues have already been decided. Given that, Subramanian’s testimony is not relevant and should be excluded under Fed. R. Evid. 402. Accordingly, the Court will grant this part of the motion.<sup>1</sup>

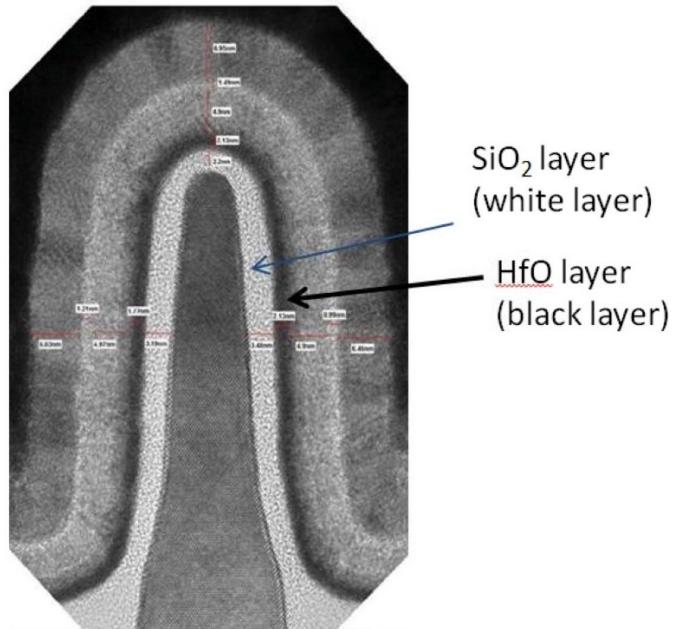
#### **B. Subramanian’s Theory Relating to “a Gate Oxide Layer” and “a First Oxide Layer” (¶¶ 100–25)**

Plaintiff contends Subramanian’s rebuttal report raises a belated claim-construction dispute in that the same layer of material cannot satisfy both the “gate oxide layer” and the “first oxide layer” claim limitations. Pl.’s Mot. [Dkt. # 219] at 3–6 (citing to Subramanian Rep. [Dkt. # 219-2] ¶ 125). Defendants respond that Plaintiff, in fact, has raised the new dispute by now proposing a meaning that is inconsistent with the Court’s claim construction. Defs.’ Resp. [Dkt. # 273] at 2–3.

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<sup>1</sup> The Court declines to address waiver because it is not the trial court’s role to instruct an appellate court on whether a party has waived an issue for appeal.

Subramanian's position concerns two different continuous layers of material in the accused devices: an interfacial silicon dioxide ( $\text{SiO}_2$ ) layer and a  $\text{HfO}$  dielectric layer. The  $\text{SiO}_2$  layer wraps completely around and contacts the fin on all sides. Subramanian Rep. [Dkt. # 219-2] ¶ 110. The  $\text{HfO}$  layer then wraps around the  $\text{SiO}_2$  layer. *Id.* ¶ 111.



**GF\_KAISTIP00000239 (annotated)**

## Subramanian opines

[t]he interfacial SiO<sub>2</sub> layer cannot correspond to the claimed “first oxide layer” because the gate electrode is not formed on the interfacial SiO<sub>2</sub> as required by the claims. . . . In addition, to the extent one would argue that the interfacial SiO<sub>2</sub> layer corresponds to the claimed “gate oxide layer,” the interfacial SiO<sub>2</sub> layer cannot also correspond to the claimed “first oxide layer” for an additional reason. Specifically, *the Plaintiff cannot point to the same layer as corresponding to both features of the claimed structure.*

*Id.* ¶ 112 (emphasis added); *see also id.* at ¶ 121. Similarly, Subramanian concludes

[t]he HfO layer is not formed on the surface of the semiconductor fin. Instead, the HfO layer is formed on the surface of the interfacial SiO<sub>2</sub> layer.

As such, the HfO layer cannot correspond to the claimed “first oxide layer” which is required to be “formed on the upper surface of said Fin active region[.]” . . . The HfO layer cannot correspond to the claimed “gate oxide layer” because the HfO layer is not “formed on both side-walls of the Fin active region.” . . . In addition, *the Plaintiff cannot point to the HfO layer as corresponding to both “gate oxide layer” and “first oxide layer” features of the claimed structure.*

*Id.* ¶ 113 (emphasis added); *see also id.* at ¶ 122.

The ’055 Patent’s specification makes this a straight-forward issue. The patent shows an embodiment of the invention with a continuous layer of material in contact with the fin active region (4). ’055 Patent fig.3a, 3b. The specification identifies part of that continuous layer as the gate oxide layer (12) formed on the sidewalls of the fin, a second part as the first oxide layer (6) formed on the fin’s upper surface, and a third part as the second oxide layer (10) formed on the underlying bulk substrate (2b). *Id.* at 5:35–52. Contrary to Defendants’ contention, this describes the first oxide layer and gate oxide layer as different regions of one continuous layer that surrounds the fin active region. Thus, Subramanian’s statement that “the Plaintiff cannot point to the same layer as corresponding to both features of the claimed structure” is an incorrect construction of the claim, and the Court will **preclude** Defendants and Subramanian from advancing that position before the jury.

### C. Whether the Source/Drains Must Be a Part of the Fin Active Region (¶¶ 160–67)

Plaintiff complains that Subramanian’s opinion effectively imports dependent limitations of Claims 11–12 into Claim 1. Pl.’s Mot. [Dkt. # 219] at 6–7. Claim 1 recites

“a Fin active region which is a wall-shape single crystalline silicon” and “a source/drain region which is formed on both sides of the Fin active region except where said gate overlaps with the Fin active region.” ’055 Patent at 12:4–5, 12:18–20. Each of Claim 11 and Claim 12 recite “a doping junction depth for the source/drain formed in said Fin active region.” *Id.* at 13:30–32, 13:35–37. Subramanian opines that “[d]ependent claims 11 and 12 make clear that the ‘Fin active region’ recited in independent claim 1 includes the source/drain.” Subramanian Rep. [Dkt. # 219-2] ¶ 160.

Defendants’ response does not refute Plaintiff’s argument about Claim 1. Instead, Defendants argue Subramanian provides a valid opinion for Claims 11–12 and therefore this part of Plaintiff’s motion should be denied as to those two claims. Defs.’ Resp. [Dkt. # 273] at 9.

Defendants’ lack of a substantive response resolves this issue. Accordingly, the Court will **preclude** Subramanian from opining that the Fin active region recited in independent claim 1 includes the source/drain.

#### D. Oxidation Layer (¶¶ 178–80, 187–91, 216–19)

Plaintiff next asks the Court to strike Subramanian’s opinion that an oxide layer not formed by oxidation cannot be a “first oxidation layer” or a “second oxidation layer,” as recited in the claims. Plaintiff argues the Court has already rejected Subramanian’s position during claim construction and concluded the oxide layers are not limited to layers formed by an oxidation process. Pl.’s Mot. [Dkt. # 219] at 7–8. Defendants respond that the Court did not address whether a layer *not* formed by oxidation can meet the “oxidation layer”

limitation, and that question is proper for the jury. Defs.’ Resp. [Dkt. # 273] at 9–10.

During claim construction, the parties disputed whether this term was indefinite. *See* Cl. Constr. Mem. Op. & Order [Dkt. # 179] at 28, 45. In resolving that dispute, the Court construed “first oxidation layer” and “second oxidation layer” as “first oxide layer” and “second oxide layer,” respectively. *Id.* at 29, 47. Given that, the question for the jury is whether the accused devices include first and second oxide layers as recited—not whether those oxide layers are made from an oxidation process. *See In re Johnson*, 394 F.2d 591, 594 (C.C.P.A. 1968) (“This court has repeatedly held that a claim for an article capable of such definition must define the article by its structure and not by the process of making it.”). Accordingly, the Court will **preclude** Subramanian from opining the accused devices are not covered by the claims because of the process by which they are made.

#### E. Selective Epitaxial Layer (¶¶ 194–98)

Plaintiff complains about Subramanian’s opinion that, “[b]ecause the alleged source/drain region and alleged ‘selective epitaxial layer’ are one in the same, the Accused Devices do not satisfy the requirement that there be both ‘a source/drain region’ and a ‘selective epitaxial layer.’” Pl.’s Mot. [Dkt. # 219] at 8–9; *see also* Subramanian Rep. [Dkt. # 219-2] ¶ 197. Defendants counter that different claim terms are presumed to correspond to different structures, and that Plaintiff has failed to rebut this presumption. Defs.’ Resp. [Dkt. # 273] at 11.

Both the specification and claims support the position that the source/drain region must exist before the selective epitaxial layer can be grown and, therefore, the two

limitations are not the same. Claim 7, for example, requires a “selective epitaxial layer . . . grown on both sides (source/drain region) of the Fin active region,” ’055 Patent at 13:5–6, so the same accused structure cannot satisfy both limitations since the existence of the first limitation is a prerequisite to formation of the second. *See also* ’055 Patent at 7:32–34 (“Hence, the selective epitaxial layer 18 is grown on the source/drain region as well as on the poly-silicon or SiGe gate 16 resulting in a reduction in the resistance.”)

Subramanian, however, makes a legal statement incident to his conclusion—specifically, “that Plaintiff cannot point to the same element as satisfying both of these limitations.” Subramanian Rep. [Dkt. # 219-2] ¶ 196. The Court has not resolved that issue. Accordingly, the Court will **preclude** Subramanian from asserting that legal proposition before the jury, although he may opine that, as a factual matter, the accused devices do not satisfy both the “source/drain region” and “selective epitaxial layer” claim limitations.

#### **F. Expert Testimony Relating to the Corresponding Japanese Application**

Finally, Plaintiff complains that Subramanian opines as to the implications of claims of a corresponding Japanese patent application having been rejected by the Japanese Patent Office. Pl.’s Mot. [Dkt. # 219] at 9–10. Defendants respond that the denial of claims in the Japanese application is highly relevant at least to Defendants’ defenses against Plaintiff’s claims of willful and direct infringement. Defs.’ Resp. [Dkt. # 273] at 11–12.

The Court previously considered this issue when deciding Plaintiff’s Motion in Limine No. 18. *See* Order on Motions in Limine [Dkt. # 416] at 4; Hr’g Tr. (Apr. 18, 2017) [Dkt. # 387] at 69:2–72:14. For the same reasons explained during the hearing, the Court

will **grant** this part of the motion.

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The Court **GRANTS** the motion **IN PART**. Specifically, the Court **ORDERS** that Defendants may not offer argument or testimony:

- (1) concerning Paragraphs 82–89 of Subramanian’s rebuttal report;
- (2) that Plaintiff cannot, as a matter of law, point to either the SiO<sub>2</sub> or HfO layers by themselves as satisfying both the “gate oxide layer” and the “first oxide layer” limitations;
- (3) that the Fin active region recited in independent claim 1 includes the source/drain;
- (4) that whether the “oxidation layer” or “oxide layer” limitations are present in the accused devices depends on the manufacturing process by which those layers are formed;
- (5) that Plaintiff cannot, as a matter of law, point to the same element as satisfying both the “source/drain region” and “selective epitaxial layer” limitations; and
- (6) concerning Paragraph 67 of Subramanian’s rebuttal report.

Otherwise, the Court **DENIES** the motion.

**SIGNED** this 29th day of May, 2018.



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ROY S. PAYNE  
UNITED STATES MAGISTRATE JUDGE